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REMARKS/ARGUMENTS

Applicant thanks the Examiner for the courtesies extended to the undersigned during the telephonic interview on August 2, 2004. As discussed during the interview, Applicant has amended independent Claims 1 and 12 to more clearly define the invention, as explained more fully below. Applicant requests reconsideration of Claims 1-20 in view of the Amendments and Remarks set forth herein, which Applicant considers to be a summary of the matters discussed during the interview.

The Rejection Directed to Claims 1-20 Is Overcome

The Office Action rejected Claims 1-20 under 35 U.S.C. § 103(a) as being obvious over U.S. Patent No. 5,438,858 to Friedrichs in view of U.S. Patent No. 6,248,277 to Friedrichs. During the interview it was discussed that the Friedrichs '858 patent discloses an extrusion die 2 having a plurality of elastic threads 9 that are structured to form twisted internal bore holes 14 as the extrusion material moves through the outer ring die 3. Regarding the Friedrichs '277 patent, it was discussed that '277 patent discloses an extrusion head 10 having highly elastic or easily bendable filaments 18 structured to produce spiral inner channels 22 in the rod preform as the plasticized powder compound is extruded through the nozzle mouthpiece 14 of the extrusion head 10. It was also discussed that the Friedrichs '277 patent discloses an array of flow-guiding surfaces in the form of a plurality of guide blades 28 that are structured to impart rotational flow to the extrusion material flowing through the nozzle mouthpiece 14.

In contrast, the threaded pin or pins of the present invention are structured to rotate against and through the workpiece creating friction that generates sufficient heat to plasticize the workpiece material proximate to the rotating pin or pins. This is advantageous since it results in refinement of the workpiece grain structure. During the interview, it was agreed that neither the Friedrichs '858 patent nor the Friedrichs '277 patent teach or suggest stirring or mixing the extrusion material to create friction that generates sufficient heat to plasticize the material. As discussed during the interview, Applicant has amended independent Claims 1 and 12 to further emphasize that the one or more pins of the present invention at least partially plasticize the

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workpiece through frictional heat as the workpiece moves through the interior of the die.
Applicant submits that independent Claims 1 and 12, and the claims depending therefrom, as clarified by the above-referenced amendment, include recitations which patentably distinguish the claimed invention over the cited references.

CONCLUSION

In view of the foregoing remarks, Applicant respectfully submits that Claims 1-20 of the present application are in condition for allowance. It is respectfully requested that a Notice of Allowance be issued in due course. Examiner Tolan is encouraged to contact Applicant's undersigned attorney to resolve any remaining issues in order to expedite examination of the present application.

It is not believed that extensions of time or fees for net addition of claims are required, beyond those that may otherwise be provided for in documents accompanying this paper. However, in the event that additional extensions of time are necessary to allow consideration of this paper, such extensions are hereby petitioned under 37 CFR § 1.136(a), and any fee required therefore (including fees for net addition of claims) is hereby authorized to be charged to Deposit Account No. 16-0605.

Respectfully submitted,


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CERTIFICATION OF FACSIMILE TRANSMISSION

I hereby certify that this paper is being facsimile transmitted to the U.S. Patent and Trademark Office at Fax No. (703) 872-9306 on the date shown below.

Elaine Kelly
Elaine Kelly

August 2, 2004
Date